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DEPARTMENT OF THE ARMY
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INSTRUCTIONS FOR THE USE OF THE AGAR DRUM VENTILATOR OF SCHIFF ET AL.

1. General Description

The device may be used both as a device for collecting bacteria and as a device for pouring agar.

For pouring, the device is set up with the driving shaft in the horizontal position, and for bacterial collection preferentially in the vertical position.

The device operates on 220 Volts AC or DC.

The rotational velocity is controlled by means of a rheostat; the device is set in motion and the rotational velocity is increased by increasingly compressing the rheostat.

At the air exit situated laterally at the bottom of the device, the air throughput may be measured by means of an air-volume meter, or it may be throttled by means of a suitable arrangement (e.g. a hose with clamp).

2. Pouring of Agar Drums

For pouring agar drums the driving belt is placed on the inner V-belt pulley. To this end the knurled nut situated on the thick hollow shaft must be rotated in such a way that this V-belt pulley runs freely.

Before pouring, the agar drums provided with 2 covers are to be placed for about 15 minutes in a refrigerator, so that after the agar is poured in it solidifies more rapidly. To keep the two drum covers which are unused during the pouring process (or during the subsequent bacterial collection) free of germs, these covers are placed on top of one another with the inner sides in contact, and the two drum edges are tightly sealed with an adhesive tape.

After removing the cover sealed with a rubber band, the clamping bolt of the propeller (ventilator) is removed, and the propeller is pulled off the shaft. Then the inside of the device and the cover are exposed to a Bunsen flame for a short time, and the cooled drum is pushed into the device without the use of force. Then the sterilized agar inlet funnel is screwed into the opening in the cover, and made tight with the rubber band of the cover. By compressing the rheostat the drum is set in full rotation, whereupon the liquid agar (about 120-140 ml) is poured in through the funnel

and the funnel is then covered. After 2-3 minutes of operation the agar solidifies on the inner side of the drum. If the agar is not solidified, this means that the device was too hot; hence, before the experiment is repeated, the device must be cooled. After removal of the poured drum, the two drum covers are again put on.

3. Collection of Atmospheric Bacteria

To this end the V-belt is placed on the outer V-belt pulley, whereby the knurled nut is rotated against the inner V-belt pulley in such a way that the latter cannot run simultaneously.

After exposing the individual parts of the device to the flame, the propeller is placed into the vertically set-up device in such a way that the propeller engages the catch situated in the shaft. This is followed by the screwing in of the axial anchor screw, after which the agar drum is pushed in, the covers put on (without inlet funnel) and cover is made tight by means of the rubber band. During the operation the two drum covers are again placed against each other, with their inner sides facing one another, to ensure that the device is kept free of germs, and sealed with an adhesive tape. After the air sample has been collected the agar drum is withdrawn and incubated, after putting on the two covers.

4. Caution

The purpose of the screw situated on the hollow shaft is to permit the oiling of the shafts. After 20-30 hours of operation about 10 drops of fine machine oil should be poured in the screw opening. After about 50 hours of operation the carbon brushes of the motor must be checked and if necessary replaced with new ones.